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EXAMINER	
ELPENORD, CANDAL	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/731,091	FISHER ET AL.	
	Examiner	Art Unit	
	Candal Elpenord	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☒ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10 December 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The indicated allowability of **claims 4-9, 11 and 13-16** are withdrawn in view of the newly discovered reference(s) to Frelechoux et al (US 2002/0023163 A1, Kermarec et al (US 2003/0110268 A1) and Holmgren et al (US 7,113,512 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 17, the limitation "instruction for associating" , recited in lines 45-6, 8, 10 and 12 is not a process, machine, manufacturer, or composition of matter, or any new and useful improvement thereof because there is no physical structure/connection of computer software recited in the claim. To overcome this rejection, it is suggested to applicant to change "instructions for associating" to--a computer-readable medium encoded with computer executable instructions--. Similar problem exists in **claims 18-22**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kermarec et al (US 2003/0110268 A1) in view of Holmgren et al. (US 7,113,512 B1).

Regarding claim 1, Kermarec et al. discloses a method ("virtual LAN service", recited in abstract, lines 1-7) of emulating Virtual Provide Local Area Network Service (VPLS) , comprising the steps of: configuring ("interconnected of plurality of PEs", recited in paragraph 0020, lines 1-9) at a plurality of provider edge devices (PEs) (fig. PE-1 to PE-3, "plurality of provider edge devices, recited in paragraph 0052, lines 1-5) a VPLS (fig. 3, VALN 3,5 to VLAN 3,7, recited in paragraph 0052) having a VPLS Identifier (ID) (VLAN id, recited in paragraph 0025 and 0018); exchanging information ("means for communication with other PEs", recited in paragraph 0029) between the PEs ("exchanges of tag frames connected to PEs", recited in paragraph 0018-0020) indicating; and for each pair of PEs (fig. fig. 2, PE-1 and PE-2, recited in paragraph 0044, lines 1-10), establishing a respective virtual circuit ("establishing a virtual circuit", recited in paragraph 0019, lines 1-5) between the pair of PEs ("virtual circuits between

PEs", recited in paragraph 0025) of each PE (fig. 2, PE-1, recited in paragraph 0044, lines 1-10) as endpoints of the virtual circuit ("means for establishing a virtual circuit for a PE, recited in paragraph 0036, lines 1-4), **regarding claim 2**, the method ("virtual LAN service", recited in abstract, lines 1-7), wherein at each PE (fig. 2, PE-1, recited in paragraph 0044, lines 1-10), **regarding claim 3**, the method ("virtual LAN service", recited in abstract, lines 1-7), wherein a second VPLS ("means for communicating with other PE and VLAN", recited in paragraph 0029, lines 1-10) is emulated at a plurality of the PEs (fig. PE-1 to PE-3, "plurality of provider edge devices, recited in paragraph 0052, lines 1-5).

Kermarec et al. discloses all the subject matter of the claimed invention with the exception of being silent with respect to the following features: **regarding claim 1**, the ATM address, **regarding claim 2**, the respective ATM address associated with VPLS is unique to the VPLS, **regarding claim 3**, the respective ATM address associated with the VPLS is also associated with the second VPLS.

However, Holmgren et al (US 7,113,512 B1) in a similar field of endeavor discloses the following features: **regarding claim 1**, discloses the ATM address (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6), the respective ATM address associated with VPLS is unique to the VPLS) associated with VLAN ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45), **regarding claim 2**, the respective ATM address (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6) , the respective ATM address associated with VPLS ("VLAN Tag associated with ATM address":, recited

in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45) is unique to the VPLS (fig. 3, Mapping Table, Plurality of VLAN such as VLAN 100, VLAN 200 associated with a unique PVC, recited in col. 5, lines 4-21), **regarding claim 3**, the respective ATM address (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6) associated with the VPLS ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45) is also associated with the second VPLS (fig. 3, VLAN 200 Tag in mapping table 24 and 46, recited in col. 5, lines 6-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Kermarec et al. by using features as taught by Holmgren et al. in order to provide address resolution when sending frames/packets from a network to another network when there are different protocols in use (See col. 2, lines 37-66 for motivation).

6. **Claims 4-5, and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kermarec et al (US 2003/0110268 A1) in view of Holmgren et al (US 7,113,512 B1) in further view of Frelechoux et al (US 2002/0023163 A1).

Regarding claim 4, Kermarec et al. discloses a method ("virtual LAN service", recited in abstract, lines 1-7) of emulating Virtual Provide Local Area Network Service (VPLS) comprising the steps: configuring ("interconnected of plurality of PEs", recited in paragraph 0020, lines 1-9) at a plurality of provider edge devices PEs (fig. PE-1 to PE-3, "plurality of provider edge devices, recited in paragraph 0052, lines 1-5), a VPLS (fig. 3, VALN 3,5 to VLAN 3,7, recited in paragraph 0052) having VPLS Identifier (ID) (VLAN

id, recited in paragraph 0025 and 0018), for each pair of PEs (fig. fig. 2, PE-1 and PE-2, recited in paragraph 0044, lines 1-10), establishing a respective virtual circuit ("establishing a virtual circuit", recited in paragraph 0019, lines 1-5) between the pair of PEs ("virtual circuits between PEs", recited in paragraph 0025) of each PE (fig. 2, PE-1, recited in paragraph 0044, lines 1-10) as endpoints of the virtual circuit ("means for establishing a virtual circuit for a PE, recited in paragraph 0036, lines 1-4), flooding each VPLS ("flooding using VLAN id", recited in paragraph 0027), exchanging information ("means for communication with other PEs", recited in paragraph 0029) between the PEs ("exchanges of tag frames connected to PEs", recited in paragraph 0018-0020), at each PE (fig. 3, VC 13x as VC labels, recited in paragraph 0053) VPLS Information Group (IG) ("VC labels", recited in paragraph 0053) , the VPLS IG ("VC labels", recited in paragraph 0053) indicating the VPLS ID ("virtual ID", recited in paragraph 0049 and paragraph 0053), **regarding claim 5**, the step of flooding each VPLS ("flooding using VLAN id", recited in paragraph 0027 and paragraph 0047), ("flooding using VLAN id", recited in paragraph 0027).

Kermarec et al. is silent with respect to the following features: **regarding claim 4**, a respective ATM address associated with the VPLS, the ATM address to be associated with the VPLS, **regarding claim 5**, an association between the VPLS ID and an ATM address.

However, Holmgren et al. in a similar field of endeavor discloses the following features: **regarding claim 4**, a respective ATM address (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6) associated with the VPLS ("VLAN Tag associated with

ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45), the ATM address (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6) to be associated with the VPLS("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45), **regarding claim 5**, an association ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45) between the VPLS ID (fig. 3, Mapping Table, Plurality of VLAN such as VLAN 100, VLAN 200 associated with a unique PVC, recited in col. 5, lines 4-21) and an ATM address ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Kermarec et al. by using features as taught by Holmgren et al. in order to provide address resolution when sending frames/packets from a network to another network when there are different protocols in use (See col. 2, lines 37-66 for motivation).

Holmgren et al. discloses all the subject matter of the claimed invention with the exception of the following features: **regarding claim 4,** the PPNI hierarchy, generating a PPNNI topology State Element, flooding the PNNI hierarchy, **regarding claim 5**, flooding the PTSE throughout a peer group, each peer group having a peer group leader, at each peer group leader, receiving each PTSE generated by a PE within the peer group of the peer group leader and flooding such PTSEs throughout a parent logical group of the peer group leader; at each peer group leader, receiving at least one

other PTSE, each other PTSE, from the parent logical group of the peer group leader; and at each peer group leader, flooding the at least one other PTSE throughout the peer group of the peer group leader.

However, Frelechoux et al (US 2002/00231 A1) in a similar field of endeavor discloses the following features: **regarding claim 4,** the PPNI hierarchy (fig. PNNI Levels, recited in paragraph 0039) , generating a PNNI topology State Element ("PTSEs generated by a logical group node", recited in paragraph 0003, lines 11-21), flooding the PNNI hierarchy (generation of PTSEs and flooding", recited in paragraph 0003, lines 11-21), **regarding claim 5**, flooding the PTSE ("flooding PTSE", recited in paragraph 0003, lines 1-9) throughout a peer group ("flooding among nodes of peer group", recited in paragraph 0003), each peer group ("one peer group serving as a peer group leader", recited in paragraph 0002, lines 4-22) having a peer group leader ("one peer group serving as a peer group leader", recited in paragraph 0002, lines 4-22), at each peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22), receiving each PTSE generated ("PTSEs generated by a logical group node", recited in paragraph 0003, lines 11-21) within the peer group ("one peer group serving as a peer group leader", recited in paragraph 0002, lines 4-22) of the peer group leader ("one peer group serving as a peer group leader", recited in paragraph 0002, lines 4-22) and flooding such PTSEs ("generation of PTSEs and flooding", recited in paragraph 0003, lines 11-21) throughout a parent logical group of the peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22); at each peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22 and); receiving at least one other PTSE ("PTSEs

receives form it neighbors", recited in paragraph 0003, lines 11-22), each other PTSE ("receiving other PTSE form other group leader", recited in paragraph 0043, from the parent logical group ("PTSEs generated by a logical group node", recited in paragraph 0003, lines 11-21) of the peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22) ; and at each peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22), flooding the at least one other PTSE throughout the peer group ("flooding back down to low level nodes", recited in paragraph 0003, lines 11-21) of the peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Kermarec et al. with Holmgren et al by using ATM standard and features as taught by Frelechoux et al. in order to provide managerial function in PAR enabled device (See paragraph 0009-0012 for motivation).

Regarding claim 12, it rejected for the same reason as claim 4.

7. **Claims 6-9, 15-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kermarec et al (US 2003/0110268 A1) in view of Holmgren et al (US 7,113,512 B1) in further view of Frelechoux et al (US 2002/0023163 A1).

Regarding claim 6, Kermarec et al. discloses a method ("virtual LAN service", recited in abstract, lines 1-7) of emulating Virtual Provide Local Area Network Service (VPLS) comprising the steps: configuring ("interconnected of plurality of PEs", recited in paragraph 0020, lines 1-9) at a plurality of provider edge devices PEs (fig. PE-1 to PE-3, "plurality of provider edge devices, recited in paragraph 0052, lines 1-5), a VPLS (fig.

3, VALN 3,5 to VLAN 3,7, recited in paragraph 0052) having VPLS Identifier (ID) (VLAN id, recited in paragraph 0025 and 0018), for each pair of PEs (fig. fig. 2, PE-1 and PE-2, recited in paragraph 0044, lines 1-10), establishing a respective virtual circuit ("establishing a virtual circuit", recited in paragraph 0019, lines 1-5) between the pair of PEs ("virtual circuits between PEs", recited in paragraph 0025) of each PE (fig. 2, PE-1, recited in paragraph 0044, lines 1-10) as endpoints of the virtual circuit ("means for establishing a virtual circuit for a PE, recited in paragraph 0036, lines 1-4), exchanging information ("means for communication with other PEs", recited in paragraph 0029) between the PEs ("exchanges of tag frames connected to PEs", recited in paragraph 0018-0020), at each PE (fig. 3, VC 13x as VC labels, recited in paragraph 0053) VPLS Information Group (IG) ("VC labels", recited in paragraph 0053) , the VPLS IG ("VC labels", recited in paragraph 0053) indicating the VPLS ID ("virtual ID", recited in paragraph 0049 and paragraph 0053), **regarding claims 7-9**, a method ("virtual LAN service", recited in abstract, lines 1-7), wherein other PE ("means for communication with other PEs", recited in paragraph 0029).

Kermarec discloses all the subject matter of the claimed invention with the exception of the following features: **regarding claim 6**, the ATM network (Asynchronous Transfer Mode), a respective ATM address associated with VPLS and the ATM address to be associated with the VPLS.

However, Holmgren et al. in a similar field of endeavor discloses the following features: **regarding claim 6**, the ATM network (Asynchronous Transfer Mode) (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6), a respective ATM address("VLAN Tag

associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45) associated with VPLS("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45) and the ATM address to be associated with the VPLS("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Kermarec et al. by using features ("interconnecting the ATM network to the Carrier Network) as taught by Holmgren et al. in order to provide address resolution when sending frames/packets from a network to another network when there are different protocols in use (See col. 2, lines 37-66 for motivation).

Holmgren et al. discloses all the subject matter of the claimed invention with the exception of being silent with respect to the following features: **regarding claim 6**, generating a PPNI Augmented Routing (PAR) Service IG, flooding each PAR Service IG throughout the ATM network, **regarding claim 7**, the method, wherein at least one other PE uses Proxy PAR to exchange PEs ATM address to be associated with the VPLS.

However, Frelechoux et al. in a similar field of endeavor discloses the following features: **regarding claim 6**, generating a PPNI Augmented Routing ("employing PPNI PAR, recited in paragraph 0005, lines 10-14 and lines 19-29 and "flooding to other ATM switches", recited in paragraph 0007) (PAR) Service IG ("PAR Client Services", recited in paragraph 0006, lines 10-23), flooding ("flooding to other ATM switches", recited in

paragraph 0007) each PAR Service IG ("check of ATM address of IP service", recited in paragraph 0019, lines 1-5) throughout the ATM network ("ATM cloud", recited in paragraph 0007, lines 7-9) **regarding claim 7**, uses Proxy PAR ("use of PAR for communicating of protocol information between devices", recited in paragraph 0008, lines 1-13) to exchange ATM address ("register and exchange of routing information", recited in paragraph 0007, lines 17-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Kermarec et al. with Holmgren et al by using ATM standard and features as taught by Frelechoux et al. in order to provide managerial function in PAR enabled device (See paragraph 0009-0012 for motivation).

8. **Claims 8-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kermarec et al (US 2003/0110268 A1) in view of Holmgren et al (US 7,113,512 B1) in view of Frelechoux et al (US 2002/0023163 A1) as applied to claim 7above, and further view of Rochberger (US 6,456, 600 B1).

Kermarec, Holmgren and Frelechoux disclose all the subject matter of the claimed invention with the exception of being silent with regard to the following features: **regarding claim 8**, an ATM link employing an ATM User Network Interface (UNI) signaling protocol, **regarding claim 9**, an ATM link employing an ATM Inter-Network Interface (AINI) signaling protocol.

However, Rochberger et al. in a similar field of endeavor discloses the following features: **regarding claim 8**, an ATM link ("interconnect ATM user to a ATM switch",

recited in col. 1, lines 53-59 and col. 1, lines 25-32) employing an ATM User Network Interface (UNI) signaling protocol ("UNI signaling mechanisms for multipoint connections", recited in col. 2, lines 16-23), **regarding claim 9**, an ATM link ("interconnect ATM user to a ATM switch", recited in col. 1, lines 53-59 and col. 1, lines 25-32) employing an ATM Inter-Network Interface (AINI) signaling protocol ("AINI", recited in col. 8, lines 25-55). Therefore, it would have been obvious to one of ordinary skill in art at the time the invention was made to modify the features of Kermarec, Holmgren and Frelechoux by using the well known ATM standards as disclosed by Rochberger et al. in order to provide interconnection to ATM devices (See col. 1, lines 30-col. 2, lines 1-15 for motivation).

9. **Claims 10-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nair et al (US 6,337,863 B1) in view of Frelechoux et al (US 2002/0023263 A1).

Regarding claims 10-11, Nair et al. discloses a method of advertising ("advertises of addresses and services", recited in abstract, lines 1-15) a service ("service of point-to-point of broadcast out and point-to-point broadcast-in", recited in col. 3, lines 9-15) having a service identifier (ID) ("VLAN identifier and service", recited in col. 4, lines 4-13) within an Asynchronous Transfer Mode (ATM) network, the ATM network (fig. 1, ATM Cloud 90, recited in col. 5, lines 6-19), the ATM network ((fig. 1, ATM Cloud 90, recited in col. 5, lines 6-19) including a plurality of nodes (fig. 1, edge devices 100,200, 300, recited in col. 5, lines 6-19) arranged in a Private Network-Network Interface (PNNI) hierarchy (fig. 1, Network System as the PNNI hierarchy, recited in col. 5, lines 6-19), the method ("advertises of addresses and services", recited

in abstract, lines 1-15) comprising the steps of: at each node (fig. 1, Edge device, 100, recited in col. 5, lines 6-19) which supports the service ("edge device for purpose of services", recited in col. 3, lines 16-26), generating a PNNI Topology State Element (PTSE) including a service Information Group (IG) ("group membership and services", recited in col. 5, lines 15-35), the service IG indicating the service ID and an ATM address ("means for direct virtual circuits to members", recited in col. 6, lines 31-43)to be associated with the service ("group membership and services", recited in col. 5, lines 15-35); and flooding PTSE throughout the PNNI, **regarding claim 11**, Nair et al. discloses a method of advertising ("advertises of addresses and services", recited in abstract, lines 1-15) a service ("service of point-to-point of broadcast out and point-to-point broadcast-in", recited in col. 3, lines 9-15) having a service identifier (ID) ("VLAN identifier and service", recited in col. 4, lines 4-13) within an Asynchronous Transfer Mode (ATM) network, the ATM network (fig. 1, ATM Cloud 90, recited in col. 5, lines 6-19), the ATM network ((fig. 1, ATM Cloud 90, recited in col. 5, lines 6-19) including a plurality of nodes (fig. 1, edge devices 100,200, 300, recited in col. 5, lines 6-19) arranged in a Private Network-Network Interface (PNNI) hierarchy (fig. 1, Network System as the PNNI hierarchy, recited in col. 5, lines 6-19), the method ("advertises of addresses and services", recited in abstract, lines 1-15) comprising the steps of: at each node (fig. 1, Edge device, 100, recited in col. 5, lines 6-19) which supports the service ("edge device for purpose of services", recited in col. 3, lines 16-26), generating a PNNI Topology State Element (PTSE) including a service Information Group (IG) ("group membership and services", recited in col. 5, lines 15-35), the service IG indicating the

service ID and an ATM address ("means for direct virtual circuits to members", recited in col. 6, lines 31-43)to be associated with the service ("group membership and services", recited in col. 5, lines 15-35) and PE (fig. 1, ATM switches and edge devices 100-300, recited in col. 5, lines 6-15).

Nair et al. discloses all the subject matter of the claimed invention with the exception of being silent with respect to the following features: **regarding claim 10**, generating a PNNI Topology State Element (PTSE) and flooding PTSE throughout the PPNI, **regarding claim 11**, generating a PNNI Topology State Element (PTSE) and flooding PTSE throughout the PPNI, flooding the PTSE throughout a peer group, each peer group having a peer group leader, at each peer group leader, receiving each PTSE generated by a PE within the peer group of the peer group leader and flooding such PTSEs throughout a parent logical group of the peer group leader; at each peer group leader, receiving at least one other PTSE, each other PTSE, from the parent logical group of the peer group leader; and at each peer group leader, flooding the at least one other PTSE throughout the peer group of the peer group leader.

However, Frelechoux et al. in a similar field of endeavor discloses the following features: **regarding claim 10**, generating a PNNI Topology State Element (PTSE) (generation of PTSEs and flooding", recited in paragraph 0003, lines 11-21) and flooding PTSE throughout the PPNI (generation of PTSEs and flooding", recited in paragraph 0003, lines 11-21). , **regarding claim 11**, flooding the PTSE ("flooding PTSE", recited in paragraph 0003, lines 1-9) throughout a peer group ("flooding among

nodes of peer group", recited in paragraph 0003), each peer group ("one peer group serving as a peer group leader", recited in paragraph 0002, lines 4-22) having a peer group leader ("one peer group serving as a peer group leader", recited in paragraph 0002, lines 4-22), at each peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22), receiving each PTSE generated ("PTSEs generated by a logical group node", recited in paragraph 0003, lines 11-21) within the peer group ("one peer group serving as a peer group leader", recited in paragraph 0002, lines 4-22) of the peer group leader ("one peer group serving as a peer group leader", recited in paragraph 0002, lines 4-22) and flooding such PTSEs ("generation of PTSEs and flooding", recited in paragraph 0003, lines 11-21) throughout a parent logical group of the peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22); at each peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22 and); receiving at least one other PTSE ("PTSEs receives form its neighbors", recited in paragraph 0003, lines 11-22), each other PTSE ("receiving other PTSE form other group leader", recited in paragraph 0043, from the parent logical group ("PTSEs generated by a logical group node", recited in paragraph 0003, lines 11-21) of the peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22) ; and at each peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22), flooding the at least one other PTSE throughout the peer group ("flooding back down to low level nodes", recited in paragraph 0003, lines 11-21) of the peer group leader ("peer group leader", recited in paragraph 0002, lines 4-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Nair et al. by

using features as taught by Frelechoux et al. in order to provide managerial function in PAR enabled device and efficient networking with respect to bandwidth preservation through flooding (See paragraph 0009-0012 for motivation).

10. **Claims 13-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kermarec et al (US 2003/0110268 A1) in view of Holmgren et al (US 7,113,512 B1) in further view of Jones et al (US 6,434,155 B1).

Regarding claim 13, Kermarec et al. discloses a method ("virtual LAN service", recited in abstract, lines 1-7) of emulating Virtual Provide Local Area Network Service (VPLS) comprising the steps: configuring ("interconnected of plurality of PEs", recited in paragraph 0020, lines 1-9) at a plurality of provider edge devices PEs (fig. PE-1 to PE-3, "plurality of provider edge devices, recited in paragraph 0052, lines 1-5), a VPLS (fig. 3, VALN 3,5 to VLAN 3,7, recited in paragraph 0052) having VPLS Identifier (ID) (VLAN id, recited in paragraph 0025 and 0018), for each pair of PEs (fig. fig. 2, PE-1 and PE-2, recited in paragraph 0044, lines 1-10), establishing a respective virtual circuit ("establishing a virtual circuit", recited in paragraph 0019, lines 1-5) between the pair of PEs ("virtual circuits between PEs", recited in paragraph 0025) of each PE (fig. 2, PE-1, recited in paragraph 0044, lines 1-10) as endpoints of the virtual circuit ("means for establishing a virtual circuit for a PE, recited in paragraph 0036, lines 1-4), advertising the association between the VPLS ID ("flooding of VLAN id to other PEs", recited in paragraph 0027, lines 1-14), **regarding claim 14**, the method ("virtual LAN service",

recited in abstract, lines 1-7), wherein the steps of setting up a virtual circuit ("means for establishing a virtual circuit for a PE, recited in paragraph 0036, lines 1-4).

Kermarec et al. is silent with respect to the following features: **regarding claim 13**, the ATM network, advertising the association between the VPLS ID and the ATM address to other nodes within the ATM network; determining other ATM addresses within the ATM network which are associated with the VPLS, set up virtual circuit with the ATM address.

However, Holmgren et al. in a similar field of endeavor discloses the following features: **regarding claim 13**, the ATM network (fig. ATM Network 26, recited in col. 3, lines 54-col. 4, lines 6), advertising (fig. 2, "Broadcast ARP and floods", recited in col. 3, lines 60-65) the ATM address ("resolved addresses and facilitate of transmission", recited in col. 4, lines 20-29) to other nodes (fig. 1, nodes 28, 30, 32, recited in col. 4, lines 20-29) within the ATM network (fig. ATM Network 26, recited in col. 3, lines 54-col. 4, lines 6); determining other ATM addresses ("determining the VLAN tag to an ATM PVC", recited in col. 3, lines 60-67 and col. 4, lines 1-6) within the ATM network (fig. ATM Network 26, recited in col. 3, lines 54-col. 4, lines 6), which are associated with the VPLS ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45), set up virtual circuit with the ATM address ("mapping of VLAN tag to corresponding ATM PVC", recited in col. 5, lines 6-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Kermarec et al. by using features ("interconnecting the ATM network to the Carrier Network) as taught by

Holmgren et al. in order to provide address resolution when sending frames/packets from a network to another network when there are different protocols in use (See col. 2, lines 37-66 for motivation).

Kermarec and Holmgren are silent with respect to the following features: **regarding claim 13**, at least one traffic characteristic, **regarding claim 14**, setting up the virtual circuit in conformance with the at least one traffic characteristic.

However, Jones et al. discloses the following features: **regarding claim 13**, at least one traffic characteristic ("Unassigned Bit Rate, Peak Cell Rate", recited in col. 2, lines 22-32), **regarding claim 14**, setting up the virtual circuit ("QoS for each VC", recited in col. 2, lines 22-32 and "establishes a VC", recited in col. 2, lines 1-8) in conformance with the at least one traffic characteristic ("Unassigned Bit Rate, Peak Cell Rate", recited in col. 2, lines 22-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Kermarec et al. with Holmgren et al. by using features as taught by Jones et al. in order to provide traffic policing per VC so that an established VC does not exceed it QoS parameters (See Col. 3, lines 19-33).

11. **Claims 15-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kermarec et al (US 2003/0110268 A1) in view of Holmgren et al (US 7,113,512 B1) in further view of Frelechoux et al (US 2002/0023163 A1).

Regarding claim 15-16, Kermarec et al. discloses a method ("virtual LAN service", recited in abstract, lines 1-7) of emulating a Virtual Private Local Area Network

Service (VPLS) at a Provider Edge device (PE) that is part of Private Network-Network Interface (PNNI) hierarchy within an Asynchronous Transfer Mode (ATM) network, comprising the steps of: configuring ("interconnected of plurality of PEs", recited in paragraph 0020, lines 1-9) at a plurality of provider edge devices PEs (fig. PE-1 to PE-3, "plurality of provider edge devices, recited in paragraph 0052, lines 1-5), a VPLS (fig. 3, VALN 3,5 to VLAN 3,7, recited in paragraph 0052) having VPLS Identifier (ID) (VLAN id, recited in paragraph 0025 and 0018), for each pair of PEs (fig. fig. 2, PE-1 and PE-2, recited in paragraph 0044, lines 1-10), determining whether PE ("virtual circuits between PEs", recited in paragraph 0025) is to set up a virtual circuit ("establishing a virtual circuit", recited in paragraph 0019, lines 1-5) , advertising the association between the VPLS ID ("flooding using VLAN id", recited in paragraph 0027 and paragraph 0047), a VPLS information group (IG) ("VC labels", recited in paragraph 0053 and fig. 4, VC-label1 and VC-label2), the VPLS ("VC labels", recited in paragraph 0053 and fig. 4, VC-label1 and VC-label2) indicating the VPLS ID ("virtual ID", recited in paragraph 0049 and paragraph 0053), **regarding claim 16**, a method ("virtual LAN service", recited in abstract, lines 1-7) of emulating a Virtual Private Local Area Network Service (VPLS) at a Provider Edge device (PE) that is part of Private Network-Network Interface (PNNI) hierarchy within an Asynchronous Transfer Mode (ATM) network, comprising the steps of: configuring ("interconnected of plurality of PEs", recited in paragraph 0020, lines 1-9) at a plurality of provider edge devices PEs (fig. PE-1 to PE-3, "plurality of provider edge devices, recited in paragraph 0052, lines 1-5), a VPLS (fig. 3, VALN 3,5 to VLAN 3,7, recited in paragraph 0052) having VPLS Identifier (ID) (VLAN id, recited in

paragraph 0025 and 0018), for each pair of PEs (fig. fig. 2, PE-1 and PE-2, recited in paragraph 0044, lines 1-10), determining whether PE ("virtual circuits between PEs", recited in paragraph 0025) is to set up a virtual circuit ("establishing a virtual circuit", recited in paragraph 0019, lines 1-5) , advertising the association between the VPLS ID ("flooding using VLAN id", recited in paragraph 0027 and paragraph 0047), a VPLS information group (IG) ("VC labels", recited in paragraph 0053 and fig. 4, VC-label1 and VC-label2), the VPLS ("VC labels", recited in paragraph 0053 and fig. 4, VC-label1 and VC-label2) indicating the VPLS ID ("virtual ID", recited in paragraph 0049 and paragraph 0053).

Kermarec et al. discloses all the claimed subject matter with the exception of being silent with respect to the following features: **regarding claim 15-16,** the ATM network, associating an ATM address with the VPLS ID, advertising the ATM address to other nodes within the network, determining other ATM addresses within the ATM network which are associated with the ATM address, for each ATM address set up a virtual circuit, for each such other ATM address, setting up a virtual circuit with other ATM address, the steps of advertising the association between the VPLS and the ATM address to other nodes within the VPLS; and the ATM address associated with the VPLS; and flooding the PTSE throughout the peer group of the node.

However, Holmgren et al. in a similar field of endeavor discloses the following features: **regarding claim 15-16,** the ATM network (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6 and "ATM destination routers connecting to the edge devices, recited in col. 3, lines 44-53),associating an ATM address with the VPLS ID ("VLAN

Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45), advertising ("flooding to determine destinations", recited in col. 3, lines 54-64 and fig. 2, "Broadcast ARP and floods", recited in col. 3, lines 60-65) the ATM address ("destinations to the ATM", recited in col. 3, lines 54-65) to other nodes (fig. 1, Edge devices, 28,30, and 32, recited in col. 3, lines 44-53) within the network (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6), determining other ATM addresses ("determine destinations", recited in col. 3, lines 54-64) within the ATM network (fig. ATM Network, recited in col. 3, lines 54-col. 4, lines 6) which are associated with the ATM address ("mapping VLAN to a path in the ATM network", recited in col. 3, lines 65-67 and col. 4, lines 1-6-("PVC which is the ATM address"), for each ATM address ("ATM address", recited in col. 5, lines 5-13) set up a virtual circuit ("mapping to corresponding PVC", recited in col. 5, lines 5-13), for each such other ATM address (fig. 1, plurality of ATM destination routers 14,16, and 18, recited in col. 3, lines 44-53), setting up a virtual circuit ("mapping to corresponding PVC", recited in col. 5, lines 5-13), with other ATM address (fig. 1, Plurality of PVCs in the VLAN mapping table, recited in col. 3, lines 44-53) the VPLS (fig. 1 and fig. VLAN and the ATM address to other nodes (fig. 1, Edge devices, 28,30, and 32, recited in col. 3, lines 44-53) within the VPLS (fig. 1 and fig. 3, VLAN table); and the ATM address (fig. 1, plurality of ATM destination routers 14,16, and 18, recited in col. 3, lines 44-53), associated with the VPLS ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the features of Kermarec et al. by using features as taught by Holmgren et al. in order to provide address resolution when sending frames/packets from a network to another network when there are different protocols in use (See col. 2, lines 37-66 for motivation).

Holmgren et al. discloses all the claimed limitation with the exception of the following features: **regarding claim 15**, generating a PNNI Topology State Element (PTSE) flooding the PTSE throughout the peer group of the node, **regarding claim 16**, generating a Private Network-Network Interface (PNNI) Augmented Routing (PAR), flooding the PAR Service IG throughout the ATM network.

However, Frelechoux et al. in a similar field of endeavor discloses the following features: **regarding claim 15**, generating a PNNI Topology State Element (PTSE) (generation of PTSEs and flooding", recited in paragraph 0003, lines 11-21), flooding the PTSE ("flooding PTSE", recited in paragraph 0003, lines 1-9) throughout the peer group of the node ("flooding among nodes of peer group", recited in paragraph 0003), **regarding claim 16**, generating a Private Network-Network Interface (PNNI) Augmented Routing (PAR) ("employing PPNI PAR, recited in paragraph 0005, lines 10-14 and lines 19-29 and "flooding to other ATM switches", recited in paragraph 0007), flooding ("flooding to other ATM switches", recited in paragraph 0007) the PAR Service IG ("PAR Client Services", recited in paragraph 0006, lines 10-23) throughout the ATM network ("flooding to other ATM switches", recited in paragraph 0007). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Kermarec et al. with Holmgren et al by using ATM

standard and features as taught by Frelechoux et al. in order to provide managerial function in PAR enabled device (See paragraph 0009-0012 for motivation).

12. **Claims 17-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmgren et al (US 7,113,512) in view of Kermarec et al (US 2003/0110268 A1) in further view of Frelechoux et al (US 2002/0023163 A1).

Regarding claim 17, Holmgren et al. discloses a node (fig. 1, Edge devices/nodes 30, 28 and 32, recited in col. 3, lines 54-60) within an Asynchronous Transfer Mode (ATM) network (fig. 2, ATM Network 26, recited in col. 3, lines 54-col. 4, lines 6), comprising: means ("receiving VLAN Tag", recited in col. 6, lines 3-11) for receiving a Virtual Private Local Area Network Service (VPLS) identifier (ID) ("VLAN Tag associated with ATM address", recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45), a VPLS controller (fig. 2 and fig. 3, VLAN Mapping table-EIWS 24, recited in col. 3, lines 54-67 and col. 4, lines 1-6) instructions for advertising (fig. 2, "Broadcast ARP and floods", recited in col. 3, lines 60-65) the association between the ATM address and the VPLS ID ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45) to other nodes within the ATM network (fig. 2, ATM Network 26, recited in col. 3, lines 54-col. 4, lines 6), recited in col. ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45); instructions for determining ("determining destination address among multiple PVCs", recited in col. 5, lines 6-13) other ATM

addresses within the ATM network (fig. 2, ATM Network 26, recited in col. 3, lines 54-col. 4, lines 6) which are associated with the VPLS ID ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45); instruction for, for each such other ATM address (fig. 1, plurality of ATM destination routers 14,16, and 18, recited in col. 3, lines 44-53), determining whether the node (fig. 1, Edge devices, 28,30, and 32, recited in col. 3, lines 44-53) is to set up a virtual circuit ("mapping to corresponding PVC", recited in col. 5, lines 5-13) with other ATM address (fig. 1, Plurality of PVCs in the VLAN mapping table, recited in col. 3, lines 44-53); and instructions, for, for each such other ATM address (fig. 1, plurality of ATM destination routers 14,16, and 18, recited in col. 3, lines 44-53) that the node (fig. 1, Edge devices, 28,30, and 32, recited in col. 3, lines 44-53) determines that the node(fig. 1, Edge devices, 28,30, and 32, recited in col. 3, lines 44-53) is to set up a virtual circuit ("mapping to corresponding PVC", recited in col. 5, lines 5-13), setting up a virtual circuit ("mapping to corresponding PVC", recited in col. 5, lines 5-13) with other ATM address (fig. 1, plurality of ATM destination routers 14,16, and 18, recited in col. 3, lines 44-53), **regarding claim 18**, and wherein the instructions for advertising the association between the ATM address and the VPLS ID comprise: the ATM address associated with the VPLS ("VLAN Tag associated with ATM address", recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45); ,**regarding claim 19**, wherein the instructions for advertising (fig. 2, "Broadcast ARP and floods", recited in col. 3, lines 60-65) the association between the ATM address and the VPLS ID ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34

and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45); comprise: the VPLS ID and the ATM address to be associated with the VPLS ("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45); **regarding claim 20**, the node (fig. 1, Edge devices 28,30 and 32, recited in col. 3, lines 44-53), wherein the instructions for advertising the association between the ATM address("VLAN Tag associated with ATM address":, recited in col. 2, lines 13-34 and fig. 3, VLAN in the Mapping Table, recited in col. 4, lines 30-45), and the VPLS ID ("VLAN tag", recited in col. 2, lines 27-36), **regarding claim 21**, a node (fig. 1, Edge devices 28,30 and 32, recited in col. 3, lines 44-53) within an Asynchronous Transfer Mode (ATM) network (fig. 1, ATM Network 26, recited in col. 3, lines 44-53), the node (fig. 1, Edge devices 28,30 and 32, recited in col. 3, lines 44-53) being part of a Private Network-Network Interface (PNNI) hierarchy within the ATM network fig. 1, ATM Network 26, recited in col. 3, lines 44-53), **regarding claim 22**, a VPLS ID and an ATM address, an association between the VPLS ID and an ATM address (see claims 18-21 rejection above).

Holmgren et al. discloses all the claimed limitation with the exception of being silent with respect of the following features: **regarding claim 18**, the VPLS information group (IG), the Service information group (IG) including the VPLS ID, **regarding claim 19**, flooding the IG, **regarding claim 21**, receiving a service (ID) identifying the service, a service information group (IG), the service indicating the service ID, instructions for flooding the IG throughout the PNNI hierarchy, **regarding claim 22**, the VPLS information group (IG).

However, Kermarec et al. in a similar field of endeavor discloses the following features: **regarding claim 18**, the VPLS information group (IG) ("VC labels", recited in paragraph 0053 and fig. 4, VC-label 1 and VC-label 2), the Service information group (IG) ("VC labels", recited in paragraph 0053) including the VPLS ID ("VLAN ID", recited in paragraph 0027), **regarding claim 19**, flooding the IG ("flooding of VC-label to every PE device", recited in paragraph 0027, lines 1-14), **regarding claim 21**, receiving a service (ID) identifying the service ("St34 "allocate VC label to (VPN-id)", recited in paragraph 0055, lines 11-14), a service information group (IG) ("VC labels", recited in paragraph 0053), the service indicating the service ID, instructions for flooding (fig. 4, Switch and Control Module programmed to implement VPN service", recited in paragraph 0045, lines 3-6) the IG ("flooding of VC-label to every PE device", recited in paragraph 0027, lines 1-14) throughout the PNNI hierarchy (fig. 2, and fig.3 as PNNI hierarchy), **regarding claim 22**, the VPLS information group (IG) ("VC labels", recited in paragraph 0053). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Holmgren by using features as taught by Kermarec et al. in order to provide multi-point connections by using a virtual circuit (See paragraph 0024-0025 for motivation).

Holmgren and Kermarec et al. disclose all the subject matter of the claimed invention with the exception of the following features: **regarding claim 18**, node that is part of Private Network-Network Interface (PNNI) hierarchy, instructions for generating a PNNI Topology State Element (PTSE), including a VPLS information Group, the VPLS IG indicating the VPLS ID and the ATM address, instructions for flooding the PTSE

throughout a peer group of the node, **regarding claim 19**, the node of a Private Network-Network Interface (PNNI) hierarchy, and instructions for generating a PNNI Topology State Element (PTSE), instructions for generating a PNNI augmented Routing (PAR), instructions for flooding the PAR service IG throughout the ATM network, **regarding claim 20**, instructions for delivering to a second node using Proxy PAR, **regarding claim 21**, instructions for generating a PNNI Topology State Element (PTSE), instructions for flooding the PNNI hierarchy, **regarding claim 22**, instructions for receiving at least one PNNI Topology State Element (PTSE) from nodes within the child peer group, instructions for flooding each of the at least one PTSE throughout the peer group, instructions for receiving at least one other PTSE from other logical group nodes within the peer group, each PTSE; instructions for flooding each of the at least one other PTSE throughout the child peer group.

However, Frelechoux et al (US 2002/00231663 A1) in a similar field of endeavor discloses the following features: **regarding claim 18**, node that is part of Private Network-Network Interface (PNNI) hierarchy, instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for generating a PNNI Topology State Element (PTSE) ("flooding PTSE back down to child groups", recited in paragraph 0046, lines 3-19), including a VPLS information Group, the VPLS IG indicating the VPLS ID and the ATM address, instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for flooding ("flooding of PTSEs", recited in paragraph 0003, lines 7-16) the PTSE throughout a peer group ("peer group of the node", recited in paragraph 0003, lines 1-14) of the node (fig. 2,

Peer Group 88 of Logical Node Group 1.12, recited in paragraph 0045, lines 11-18), **regarding claim 19**, the node (fig. 1 and fig. 2, LGN1.0, recited in paragraph 0045, lines 5-18) of a Private Network-Network Interface (PNNI) hierarchy (fig. 1, PNNI level 64, recited in paragraph 0045, lines 5-18) , and instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for generating ("generation of PTSEs and flooding", recited in paragraph 0003, lines1-7 and 11-21) a PNNI Topology State Element (PTSE) ("PNNI", recited in paragraph 0003, lines 1-7, and fig. 2, PPNI levels 64 and 72, recited in paragraph 0040, lines 7-17), instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for generating ("generated of protocol information by PAR enabled device-PNNI-PAR", recited in paragraph 0031) a PNNI augmented Routing (PAR)("PNNI PAR", recited in paragraph 0031), instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for flooding ("advertise IP information by flooding PAR PTSEs", recited in paragraph 0041) the PAR service IG throughout the ATM network ("advertised in the ATM network up to PNNI level", recited in paragraph 0042, lines 1-8), **regarding claim 20**, instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for delivering ("forwarding information", recited in paragraph 0043, lines19-21) to a second node (fig. 2, LGN 2.1.1, "Logical Group Node 2.1.1", recited in paragraph 0043) using Proxy PAR ("forwards of information, flooding via Proxy-PAR", recited in paragraph 0043), **regarding claim 21**, instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for generating ("generation of PTSEs and flooding", recited in paragraph 0003, lines1-7 and 11-21) a PNNI Topology

State Element (PTSE) ("PNNI", recited in paragraph 0003, lines 1-7, and fig. 2, PPNI levels 64 and 72, recited in paragraph 0040, lines 7-17), instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for flooding the PNNI hierarchy("generation of PTSEs and flooding", recited in paragraph 0003, lines1-7 and 11-21), **regarding claim 22**, instructions (fig. 3, Control Logic 2, and PNNI memory 3, recited in paragraph 00048, lines 1-22) for receiving at least one PNNI Topology State Element (PTSE) ("received of PTSE", recited in paragraph 0046) from nodes ("Logical Node 1.1.1 and 1.1.2, recited in paragraph 0046) within the child peer group ("child peer groups", recited in paragraph 0046), instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for flooding ("flooding within peer group", recited in paragraph 0046) each of the at least one PTSE throughout the peer group ("flooding of PTSE to peer group levels 72 and 88", recited in paragraph 0046), instructions (fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for receiving at least one other PTSE ("receiving of PTSE", recited in paragraph 0046) from other logical group nodes ("Logical Group Nodes 1.1.1 and 1.1.2", recited in paragraph 0046) within the peer group ("Peer Group 88", recited in paragraph 0045, lines 12-19), each PTSE ("PTSE", recited in paragraph 0046); instructions(fig. 3, Control Logic 2 and PNNI memory 3, recited in paragraph 00048, lines 1-22) for flooding ("flooding of PTSE to child peer groups", recited in paragraph 0046) each of the at least one other PTSE throughout the child peer group ("flooding of PTSE to child peer groups", recited in paragraph 0046). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify

the features of Holmgren with Kermarec by using features as taught by Frelechoux et al. in order to provide managerial function in PAR enabled device (See paragraph 0009-0012 for motivation).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hawthorne et al (US 2003/0152075 A1), Allen et al (US 7,136,386 B2), Stone et al (US 6,041,057), Kompella et al (US 7,136,374 B1) are cited to show methods and systems that are related to the claimed invention.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Candal Elpenord whose telephone number is (571) 270-3123. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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